

CLAIMS

1. Transmission (1), especially an automated power-split multi-speed transmission, comprising at least three power branches (P1, P2, P3), which are each connected to a shaft (2, 3, 4) of a downstream planetary gearset (5) and are configured with at least one partial transmission ratio (i_1 , i_2 , i_3), each of the power branches (P1, P2, P3) comprising a control element (S1, S5, S6) for connecting the power branches (P1 to P3) to a power flow at a partial transmission ratio (i_1 , i_2 , i_3) and with at least one of the shafts (3, 4) of the planetary gearset (5) interacting with an additional control element (S2, S4), via which the shafts (3, 4) can be supported in relation to a housing (6), characterized in that an additional control element (S3), which in its closed state blocks the planetary gearset (5), is arranged between two shafts (3, 4) of the planetary gearset (5).

2. Transmission according to claim 1, characterized in that a gear ratio device (11, 14) with a partial transmission ratio (i_k) is provided, which may be connected to a power flow for the implementation of several partial transmission ratios (i_1 , i_2) of the power branches (P1, P2) in combination with additional gear ratio devices (12, 15) (13, 16).

3. Transmission according to claim 1 or 2, characterized in that the planetary gearset (5) is configured as a four-shaft planetary gearset, one shaft (2, 3, 4) interacting with one of the three power branches (P1, P2, P3), respectively, and a fourth shaft (19, 20) being coupled to a gear output shaft (18).

4. Transmission according to claim 1, characterized in that the planetary gearset (5) is formed by two minus planetary gearsets (5A, 5B), a planet carrier (17 or 19) of one minus planetary gearset (5B or 5A) interacting with an internal gear (20 or 18) of the other minus planetary gearset (5A or 5B), respectively.

5. Transmission according to claim 1 or 2, characterized in that the planetary gearset is configured as a Ravigneaux planetary gearset.

6. Transmission according to any one of the claims 1 to 5, characterized in that the control elements are configured as positive or friction control elements.

7. Transmission according to any one of the claims 1 to 6, characterized in that the transmission is configured as a combination of a power-split countershaft transmission and the planetary gearset arranged downstream from the countershaft transmission.

8. Transmission according to any one of the claims 1 to 7, characterized in that the countershaft transmission comprises at least two countershafts.

9. Transmission according to any one of the claims 1 to 8, characterized in that two of the control elements (S1 to S6) are connected to implement an overall gear ratio (i_{ges}) of the transmission (1).

10. Transmission according to any one of the claims 1 to 9, characterized in that the transmission (1) comprises a progressive ratio.

11. Transmission according to claim 9 or 10, characterized in that the overall gear ratio (i_{ges}) can be implemented by at least one of the partial transmission ratios (i_1 , i_2 , i_3) of a connected power branch.

12. Transmission according to claim 1, characterized in that the overall gear ratio (i_{ges}) can be implemented by one partial transmission ratio (i_1 , i_2 , i_3) of two simultaneously connected power branches (P1, P2, P3).